

Joshua Poole

Individual Capstone Assignment

15 September 2020

Cam Skubik-Peplaski and myself, Josh Poole, have come together to create a web platform for our CS Senior Design project. The web platform will be built using React, an extensive library for creating UIs with JavaScript and TypeScript. The main purpose of the web platform we are creating is to create a space for sharing and displaying 3D models. We will be using three.js, a lightweight 3D library, to accomplish this goal. This project will challenge my current web design knowledge and expose me new frameworks and libraries for creating interactive experiences on the web. It will also allow me to strengthen my teamworking skills by working closely with another student and advisor to design and execute this project.

Unfortunately, I have not had the chance to formally take any classes at the University of Cincinnati that are directly related to web design. However, I believe my fundamental knowledge of programming concepts in general that I have learned in school will assist me. CS4071 Database Design & Development taught me important concepts and practices in creating a reliable relational database. This knowledge is useful in any web based application as there is often a need to store data in a database that can be displayed on a webpage through an API. Additionally, CS4065 Computer Networks focused on how computers communicate with each other. Understanding that process is necessary for anyone working on an application on the internet as there are countless ways for your website to be exploited.

My co-op experience on the other hand will be extremely useful in the development of this senior project. As a Digital Technology intern at GE Digital, one aspect of software

development that was enlightening was the attention to detail of the workflow pipeline. For even a small change to production code to be released, there are countless manual and automated checks for code quality, test coverage, and efficacy. I hope to bring a strict and robust pipeline to this project to improve our overall code quality and minimize avoidable mistakes. I also had hands on experience with web development as a Digital Technology intern, which I had no prior experience with. I used Angular and a library built by some of my coworkers to create a plugin for the identity management software used by GE and my team. It allowed my team and supervisor to see the health of connected applications in order to decide whether they should be terminated or not, as many were no longer in use. Although React TypeScript will be different than Angular JS I believe my practice and knowledge of JS frameworks will allow me to pick the concepts up quickly.

I am really looking forward to starting to be involved in the development process of this application. I have not had a lot of experience with developing web applications mostly on my own, as I largely relied on an existing library for the UI aspect of my web project on co-op, but I am excited for a new opportunity. I am also excited for the design stage of the project where my team and I can have complete freedom in how we want our application to feel, look, and operate. Working with new tools and frameworks such as React and three.js is also very exciting as it will be a useful and interesting new experience, especially to learn how 3D models exist on a webpage. I am motivated to learn about new concepts and create something completely from scratch.

My view of how our preliminary approach to designing a solution should be top-down, where we clearly define the end goal of our project and formulate our essential few features

around that. These large features would then be broken down into smaller components and tasks that can be completed or at least planned to be completed over a reasonable timespan. I also believe it will be crucial to look into services like AWS that could assist the storage and operation of the web application and allow for the use of a robust development environment. My minimum expectations for the final project is to have a user friendly webpage with robust capability for viewing 3D models, but I think adding a place for users to upload, share, and comment on 3D models in a community like environment would be very cool. Lastly, contributions should be evaluated on the care and effort put into the work. I think code that is thoroughly checked and tested, even if it takes longer should be prioritized and rewarded. You are done with your contribution when you are confident in not only its efficacy but also satisfied with its quality and efficiency.